Service Manual SHARP

MODEL

FV-1800

SPECIFICATIONS

Frequency Range: LW 150~370 kHz
MW 520~1620 kHz
SW1 1.6~4.3 MHz
SW2 3.9~12.0 MHz
SW3 12.0~26.5 MHz
FM 88~108 MHz
Intermediate Frequency:
AM 455 kHz
FM 10.7 MHz
Power Supply: DC 12V (UM-l battery × 8) or
AC 100~120, 200~240V 50/60Hz
Power Output: Undistorted 2W
Maximum 3.5W
Speaker: 3-1/2″ × 4″ (9cm × 10cm) Oval
P.D.S. V.C. imp. 4 ohms
Dimensions: 35 cm (W) × 23.8 cm (H) × 14 cm (D)
(13-3/4″ × 9-3/8″ × 5-1/2″)
Weight: 5.5 Kg (121ds) without batteries

TRANSISTOR COMPLEMENT

Q1	2SA234 Ⓑ	AM Oscillator
Q2	2SA234 Ⓒ	AM RF Amplifier
Q3	2SA234 Ⓒ	AM Mixer
Q4	2SK19	FM RF Amplifier
Q5	2SC535 Ⓐ	FM Mixer
Q6	2SC461 Ⓑ	FM Oscillator
Q7	2SA234 Ⓑ	1st IF Amplifier
Q8	2SA234 Ⓐ	2nd IF Amplifier
Q9	2SA234 Ⓐ	3rd IF Amplifier
Q10	2SA12 Ⓒ	BFO
Q11	2SC458 Ⓑ	Audio Amplifier
Q12	2SC458 Ⓑ	Audio Amplifier
Q13	2SB75 Ⓑ	Audio Driver
Q14	2SB370 Ⓑ	Audio Output
Q15	2SB370 Ⓑ	Audio Output
Q16	2SC830 Ⓑ	Power Stabilizer
Q17	2SC458 Ⓑ	Power Stabilizer

SHARP CORPORATION OSAKA, JAPAN

GENERAL DESCRIPTION

The circuit used in this 6 band portable radio incorporates 17 transistors 13 diodes and 2 thermistors.

A ferrite bar antenna feeds the AM broadcasting signal to the AM mixer and a telescopic rod antenna feeds the AM broadcasting signal to the AM mixer, 2 IF amplifiers and a diode detector.

A telescopic rod antenna feeds the FM broadcasting signal to the FM RF amplifier, FM mixer, 3 IF amplifier and FM detector (2 diodes).

The audio signal passes through a 5 transistor audio amplifier circuit.

An AM AVC voltage is fed back to the 1st IF amplifier. An FM AVC voltage is fed back to the FM RF amplifier.

An AFC voltage is fed back to the FM converter.

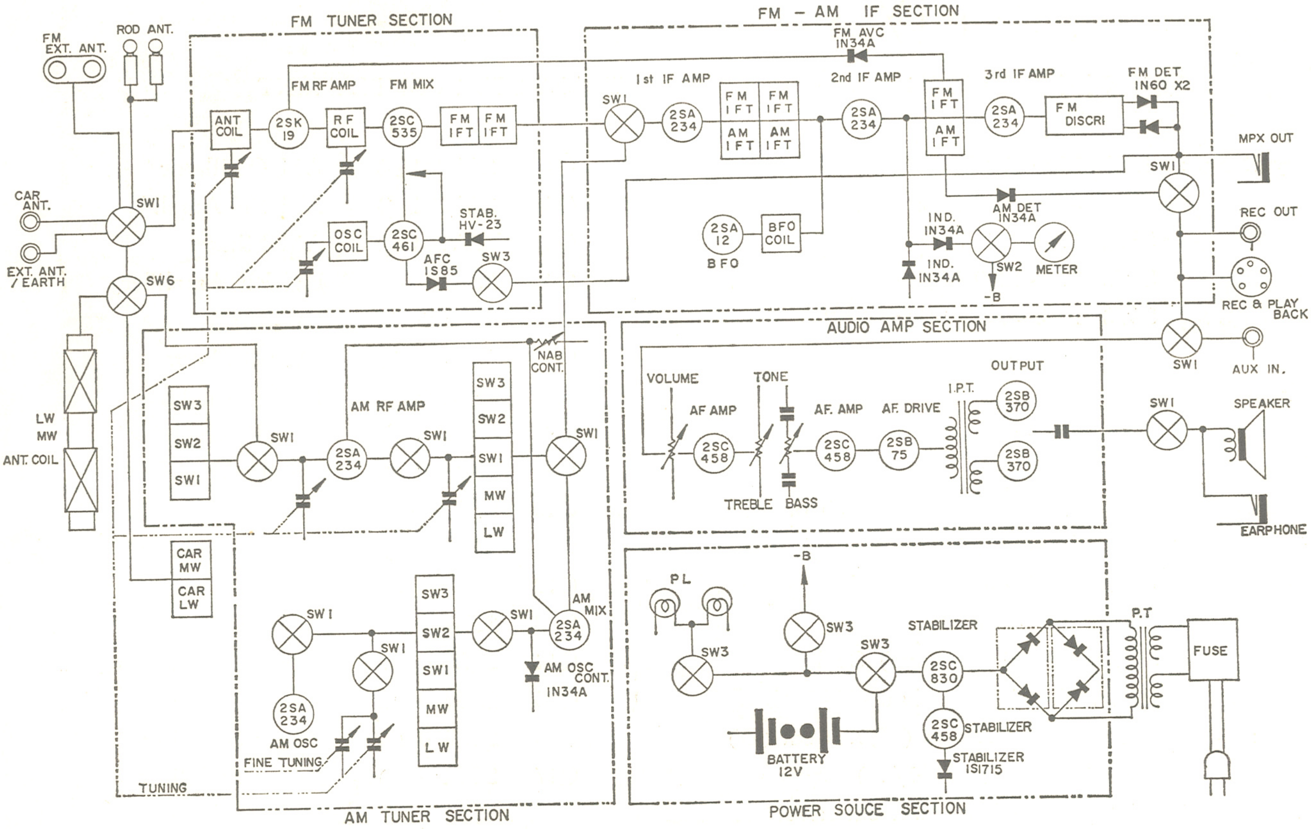

FM TUNER SECTION
FM EXT. ANT.
ROD ANT.
CAR ANT.
EXT. ANT. / EARTH
SWI
SW6
FM RF AMP
FM MIX
ANT COIL
2SK 19
RF COIL
2SC 535
FM IFT
FM IFT
OSC COIL
2SC 461
STAB. HV-23
AFC 1S85
SW3
FM – AM IF SECTION
FM AVC IN34A
1st IF AMP
2nd IF AMP
3rd IF AMP
SWI
2SA 234
FM IFT
FM IFT
AM IFT
AM IFT
2SA 234
FM IFT
AM IFT
2SA 234
FM DISCRI
FM DET IN60 X2
MPX OUT
SWI
AM DET IN34A
REC OUT
2SA 12
BFO COIL
BFO
IND. IN34A
IND. IN34A
SW2
METER
-B
REC & PLAY BACK
AUDIO AMP SECTION
SWI
AUX IN.
NAB CONT.
LW
MW
ANT. COIL
SW3
SW2
SWI
SWI
AM RF AMP
2SA 234
SWI
SW3
SW2
SWI
MW
LW
SWI
CAR MW
CAR LW
SWI
2SA 234
AM OSC
SWI
SW3
SW2
SWI
MW
LW
SWI
AM MIX
2SA 234
AM OSC CONT. IN34A
FINE TUNING
TUNING
AM TUNER SECTION
VOLUME
TONE
AF AMP
2SC 458
AF. AMP
2SC 458
AF. DRIVE
2SB 75
I.P.T.
OUTPUT
2SB 370
2SB 370
TREBLE
BASS
SWI
SPEAKER
EARPHONE
PL
-B
SW3
SW3
SW3
STABILIZER
2SC 830
2SC 458
STABILIZER
STABILIZER 1S1715
BATTERY 12V
P.T
FUSE
POWER SOUCE SECTION

Figure 1 BLOCK DIAGRAM

CHASSIS REMOVAL (Refer to Figure 2)

1. Remove the six control knobs (A) on the front panel.
2. Take off the battery cover.
3. Loosen the five screws (B) on the back of the set.
4. Fasten the terminal compartment cover.
5. Remove the antenna cord (C), indicator cord (D), battery cord (E) and speaker cord (F).
6. Loosen the five chassis retaining screws (G).
7. Gently pull out the chassis toward you.
8. When assembling, reverse the order.

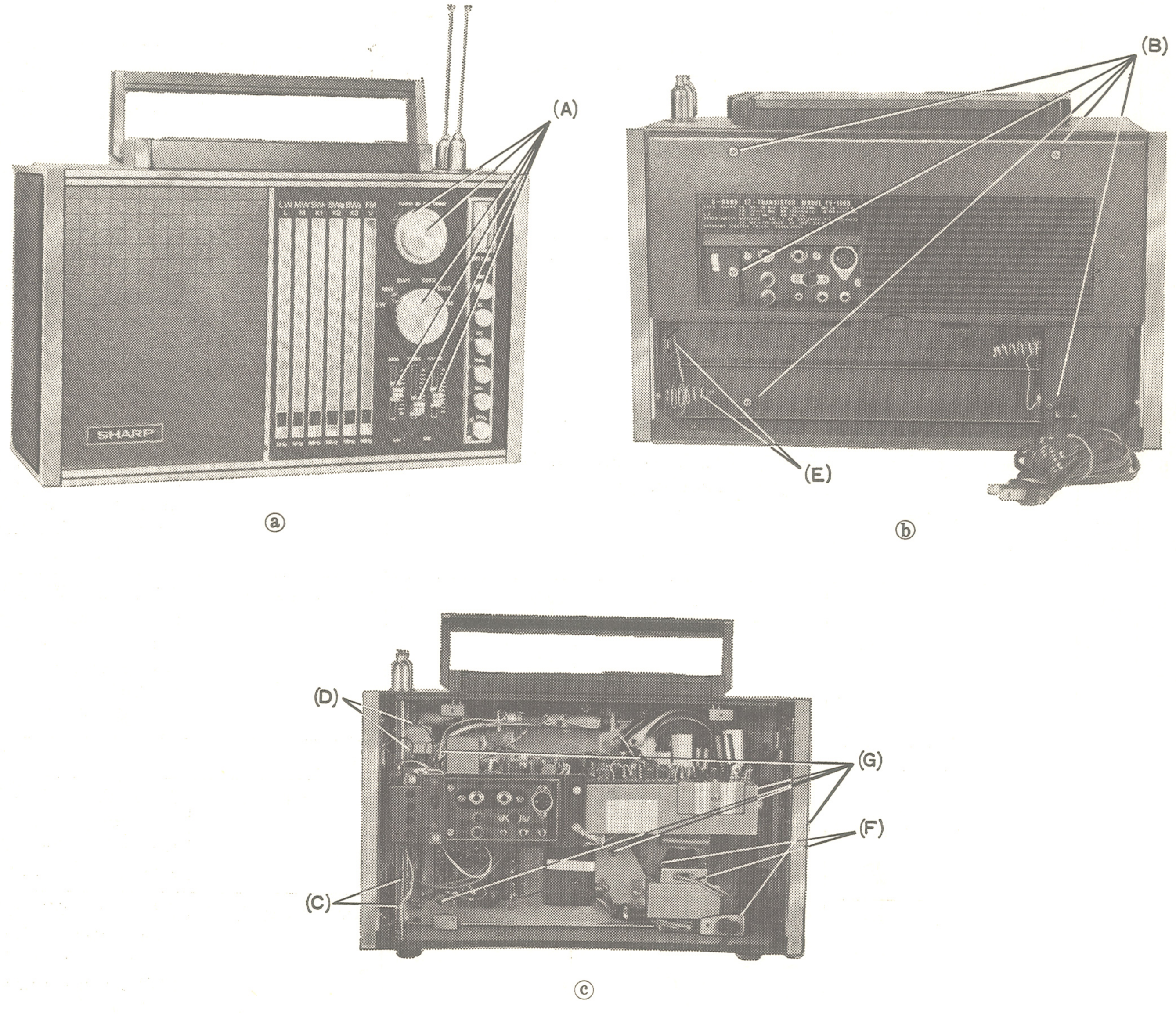


Figure 2 CHASSIS REMOVAL

GENERAL ALIGNMENT INSTRUCTIONS

Should it become necesary at any time to check the alignment of this receiver, proceed as follows;

1) Connect an output meter across the speaker voice coil lugs.
2) Set the volume control for maximum.
3) Attenuate the signals from the generator enough to swing the most sensitive range of the output meter.
4) Use a non-metallic alignment tool.
5) Repeat adjustments to insure good results.

ALIGNMENT CHART

Signal generator				Receiver		Adjustment
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks	
1	MW	Connect signal generator through a 10K ohm dummy to the antenna tuning condenser. Ground lead to the receiver chassis.	Exactly 455kHz (400Hz, 30%, AM modulated)	Tuning gang fully open. (minimum capacity)	Adjust for maximum output on speaker voice coil lugs.	T10 T 8 T 6 T 2 T 1
2	MW	Use radiation loop. Loop of several turns of wire, or place generator lead close to receiver for adequate signal pickup. Generator output to one end of this wire.	Exactly 600kHz (400Hz, 30%, AM modulated)	600kHz	Same as step 1	Adjust the MW oscillator core (L7), and then adjust the MW antenna coil (L14, L1). (See NOTE A)
3	MW	Same as step 2	Exactly 1400kHz (400Hz, 30%, AM modulated)	1400kHz	Same as step 1	Adjust the MW oscillator trimmer (C16), and then adjust the MW antenna trimmer (C201, C21). (See NOTE A)
4	MW	Repeat steps 2 and 3 until no further improvement can be made.				
5	LW	Same as step 2	Exactly 180kHz (400Hz, 30%, AM modulated)	180kHz	Same as step 1	Adjust the LW oscillator core (L6), and then adjust the LW antenna coil (L13, L1). (See NOTE A)
6	LW	Same as step 2	Exactly 350kHz (400Hz, 30%, AM modulated)	350kHz	Same as step 1	Adjust the LW oscillator trimmer (C17), and then adjust the LW antenna trimmer (C22, C202). (See NOTE A)
7	LW	Repeat steps 5 and 6 until no further improvement can be made.				
8	SW1	Same as step 2	Exactly 1.7MHz (400Hz, 30%, AM modulated)	1.7MHz	Same as step 1	Adjust the SW1 oscillator core (L8), and then adjust the SW1 antenna core (L2, L15).
9	SW1	Same as step 2	Exactly 3.7MHz (400Hz, 30%, AM modulated)	3.7MHz	Same as step 1	Adjust the SW1 oscillator trimmer (C15), and then adjust the SW1 antenna trimmer (C20, C12).
10	SW1	Repeat steps 8 and 9 until no further improvement can be made.				

Signal generator				Receiver		Adjustment
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks	
11	SW2	Same as step 2	Exactly 4.5MHz (400Hz, 30%, AM modulated.)	4.5MHz	Same as step 1	Adjust the SW2 oscillator core (L9), and then adjust the SW2 antenna core (L16, L3).
12	SW2	Same as step 2	Exactly 10MHz (400Hz, 30%, AM modulated.)	10MHz	Same as step 1	Adjust the SW2 oscillator trimmer (C14), and then adjust the SW2 antenna trimmer (C19, C11).
13	SW2	Repeat steps 11 and 12 until no further improvement can be made.				
14	SW3	Same as step 2	Exactly 13MHz. (400Hz, 30%, AM modulated.)	13MHz	Same as step 1	Adjust the SW3 oscillator core (L10), and then adjust the SW3 antenna core (L17, L4).
15	SW3	Same as step 2	Exactly 23MHz (400Hz, 30%, AM modulated.)	23MHz	Same as step 1	Adjust the SW3 oscillator trimmer (C13), and then adjust the SW3 antenna trimmer (C18, C10).
16	SW3	Repeat steps 14 and 15 until no further improvement can be made.				

NOTE A

Check the alignment of the receiver antenna coil by bringing a piece of ferrite (such as a coil slug) near the antenna loop stick, then a piece of brass. If ferrite increases output, loop requires more inductance. If brass increases output, loop requires less inductance. Change loop inductance by sliding the bobbin toward the center of ferrite core to increase inductance, or away to decrease inductance.

FM ALIGNMENT CHART

Signal generator			Receiver		Adjustment
Step	Connection to receiver	Input signal frequency	Dial setting	Remarks	
1	Connect signal generator through a 5PF dummy to test point TP-1. Generator ground lead to the receiver chassis.	Exactly 10.7MHz (400Hz, 30%, AM modulated)	Tuning gang fully closed. (maximum capacity)	Connect VTVM between test point TP-6 and chassis ground.	Detune T12 and T13 Tune T9, T7, T5, T4 and T3 for maximum indication.
2	Same as step 1	Exactly 10.7MHz (unmodulated)	Same as step 1	See NOTE B	See NOTE B.
3	Connect signal generator through a 75 ohm resistor including output impedance of signal generator to the telescopic rod antenna. Ground lead to the receiver chassis.	Exactly 88MHz (400Hz, 30%, FM modulated)	88MHz	Adjust for maximum output on speaker voice coil lugs.	Adjust the FM oscillator coil (L12), and then adjust the FM RF coil (L11, L5).
4	Same as step 3	Exactly 108MHz (400Hz, 30%, FM modulated)	108MHz	Same as step 3	Adjust the FM oscillator trimmer (C9), and then adjust the FM RF trimmer (C8, C7).
5	Repeat steps 3 and 4 until no further improvement can be made.				

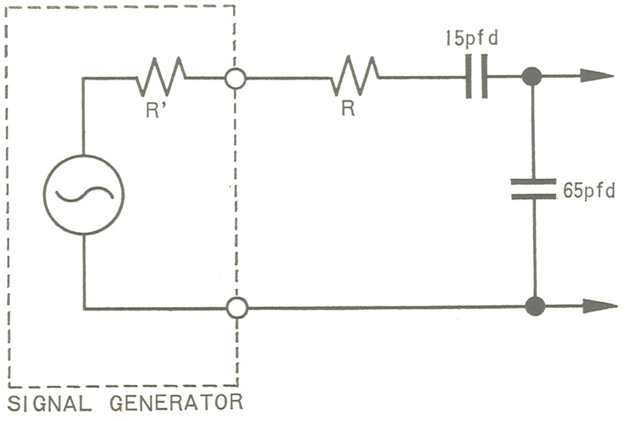
NOTE B

1) Connect VTVM (0.1 volt range DC scale) between test point TP-3 and chassis ground.
2) Adjust T13 for 0 volt.
3) Change signal generator frequency 10.7MHz+100kHz and −100kHz approx.
4) Adjust T12 for balanced peaks. Peak separation should be approx. 200kHz.

CAR ANT. ADJUSTMENT

(In case of car use, set the switch (SW6) to "Car (2)" position.)

Signal generator				Receiver		Adjustment
Step	Band	Connection to receiver	Input signal frequency	Dial setting	Remarks	
1	MW	Use radiation loop. Loop of several turns of wire, or place generator lead close to receiver for adequate signal pickup. Connect generator output to one end of this wire.	Exactly 600kHz. (400Hz 30%, AM modulated.)	600kHz	Adjust for maximum output on speaker voice coil lugs.	Adjust the MW antenna coil (L14, L202). (See NOTE A)
2	MW	Same as step 1	Exactly 1400kHz. (400Hz, 30%, AM modulated.)	1400kHz	Same as step 1	Adjust the MW antenna trimmer (C21, C203). (See NOTE A)
3	MW	Repeat steps 1 and 2 until no further improvement can be made.				
4	LW	Same as step 1	Exactly 180kHz. (400Hz 30%, AM modulated.)	180kHz	Same as step 1	Adjust the LW antenna cail (L13, L201). (See NOTE A)
5	LW	Same as step 1	Exactly 350kHz (400Hz, 30%, AM modulated.)	350kHz	Same as step 1	Adjust the LW antenna trimmer (C22, C204). (See NOTE A)
6	LW	Repeat steps 4 and 5 until no further improvement can be made.				

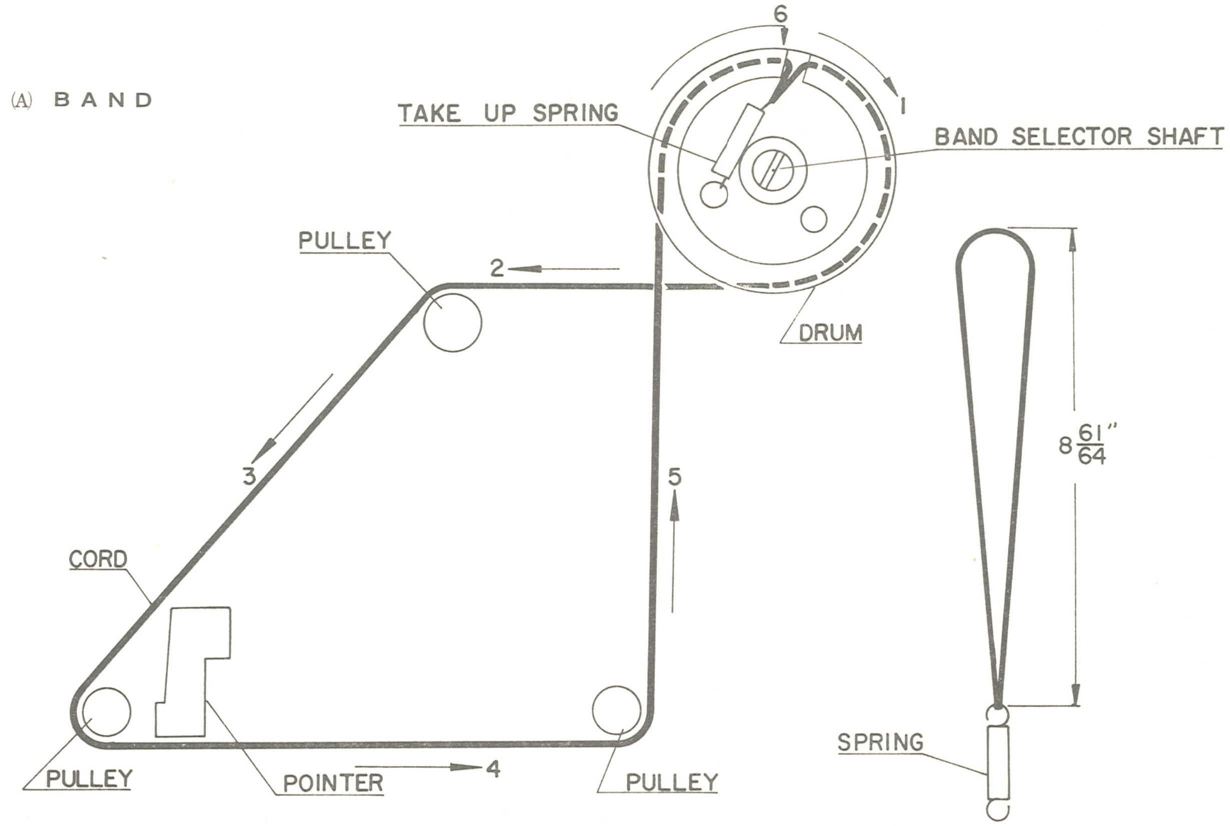


CAR ANT. JACK
(R = 80 – R')
R'= out put impedance
of signal generator

CAR ANT. DUMMY

Figure 3

(A) BAND


6
1
TAKE UP SPRING
BAND SELECTOR SHAFT
PULLEY
2
DRUM
3
5
8 61/64"
CORD
PULLEY
POINTER
4
PULLEY
SPRING

(B) FREQUENCY

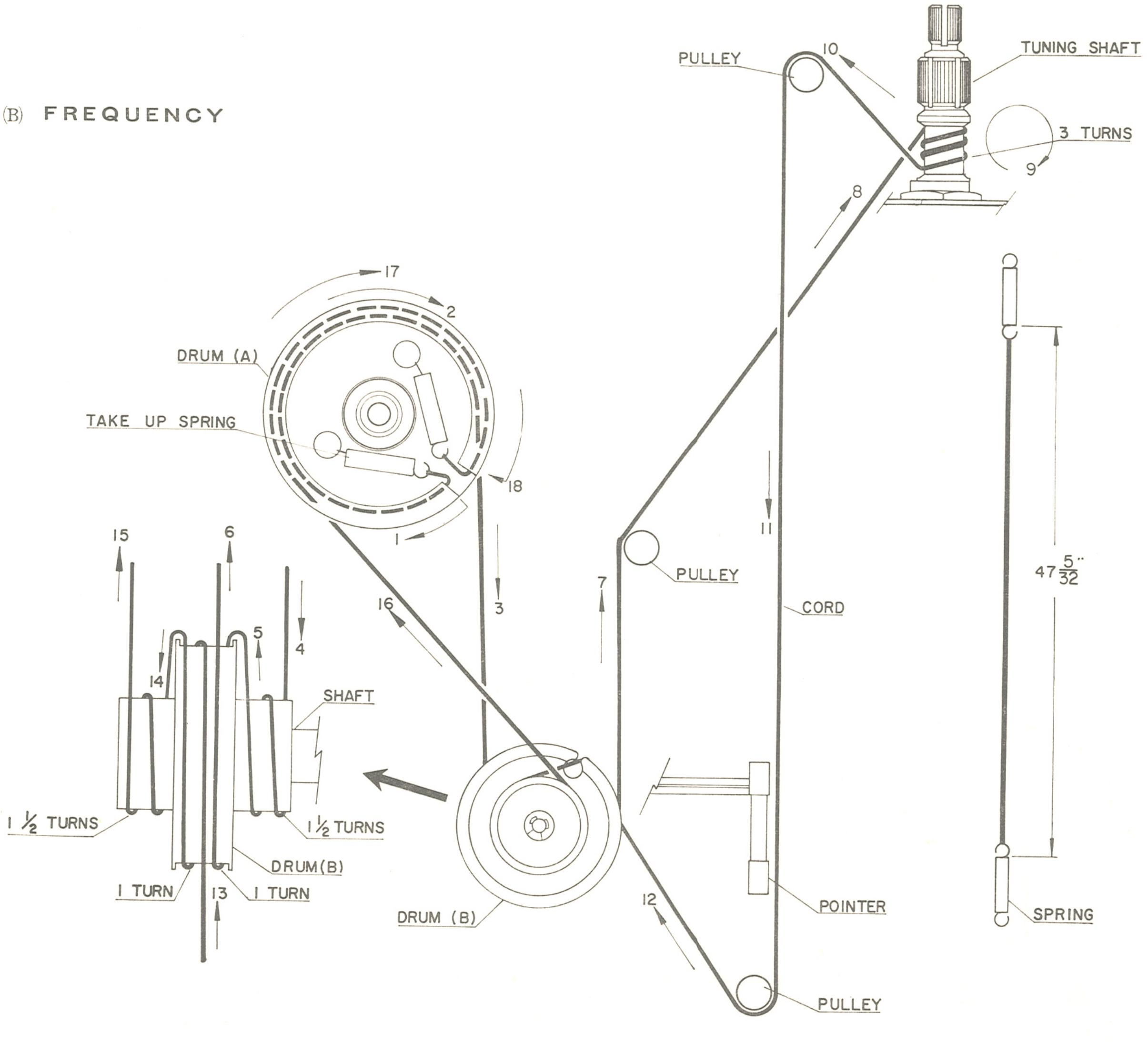
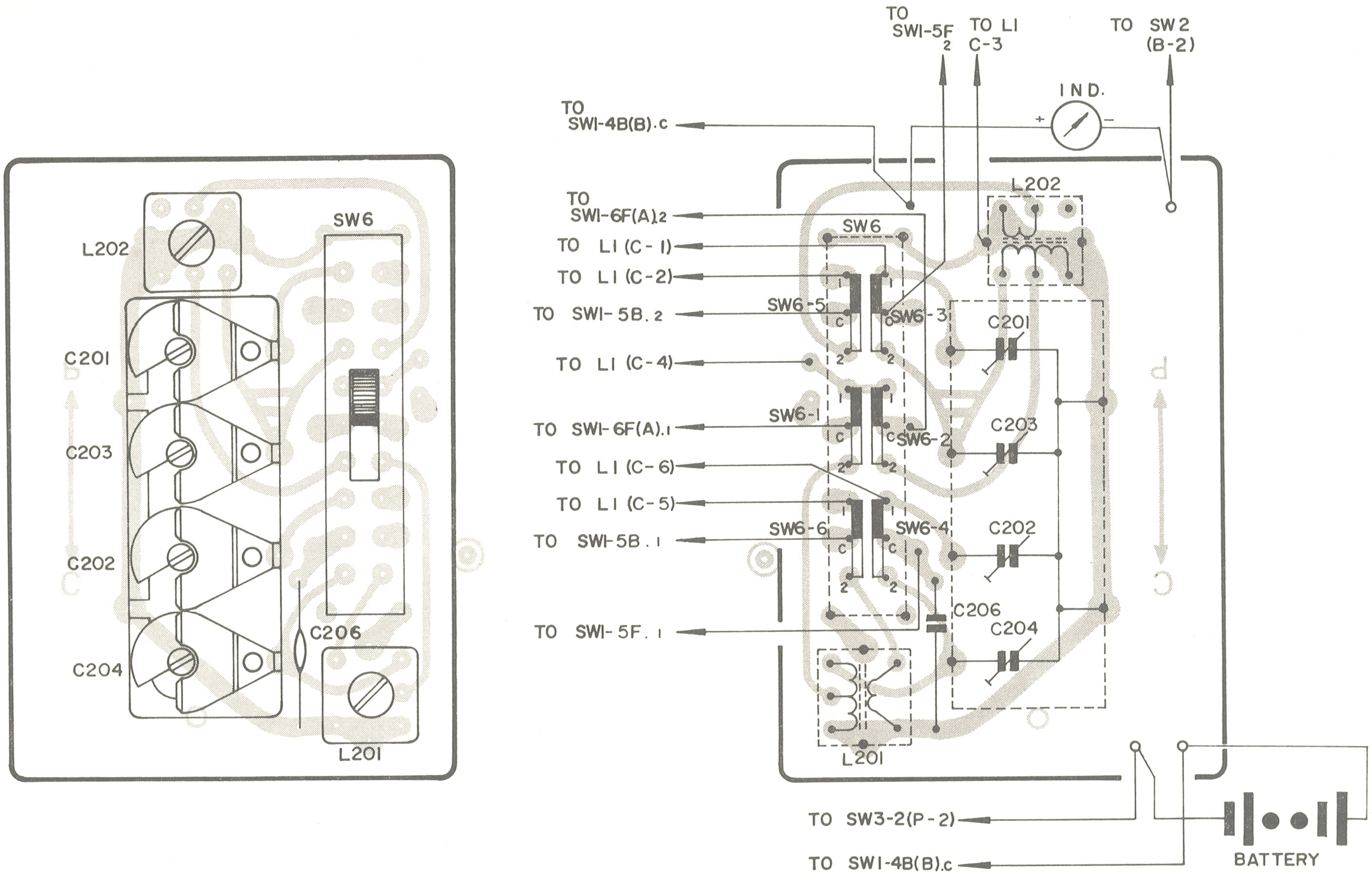

PULLEY
10
TUNING SHAFT
3 TURNS
9
8
17
2
DRUM (A)
TAKE UP SPRING
18
1
11
15
6
16
3
7
PULLEY
CORD
47 5/32"
14
5
4
SHAFT
1 1/2 TURNS
1 1/2 TURNS
DRUM(B)
1 TURN
13
1 TURN
DRUM (B)
12
POINTER
SPRING
PULLEY

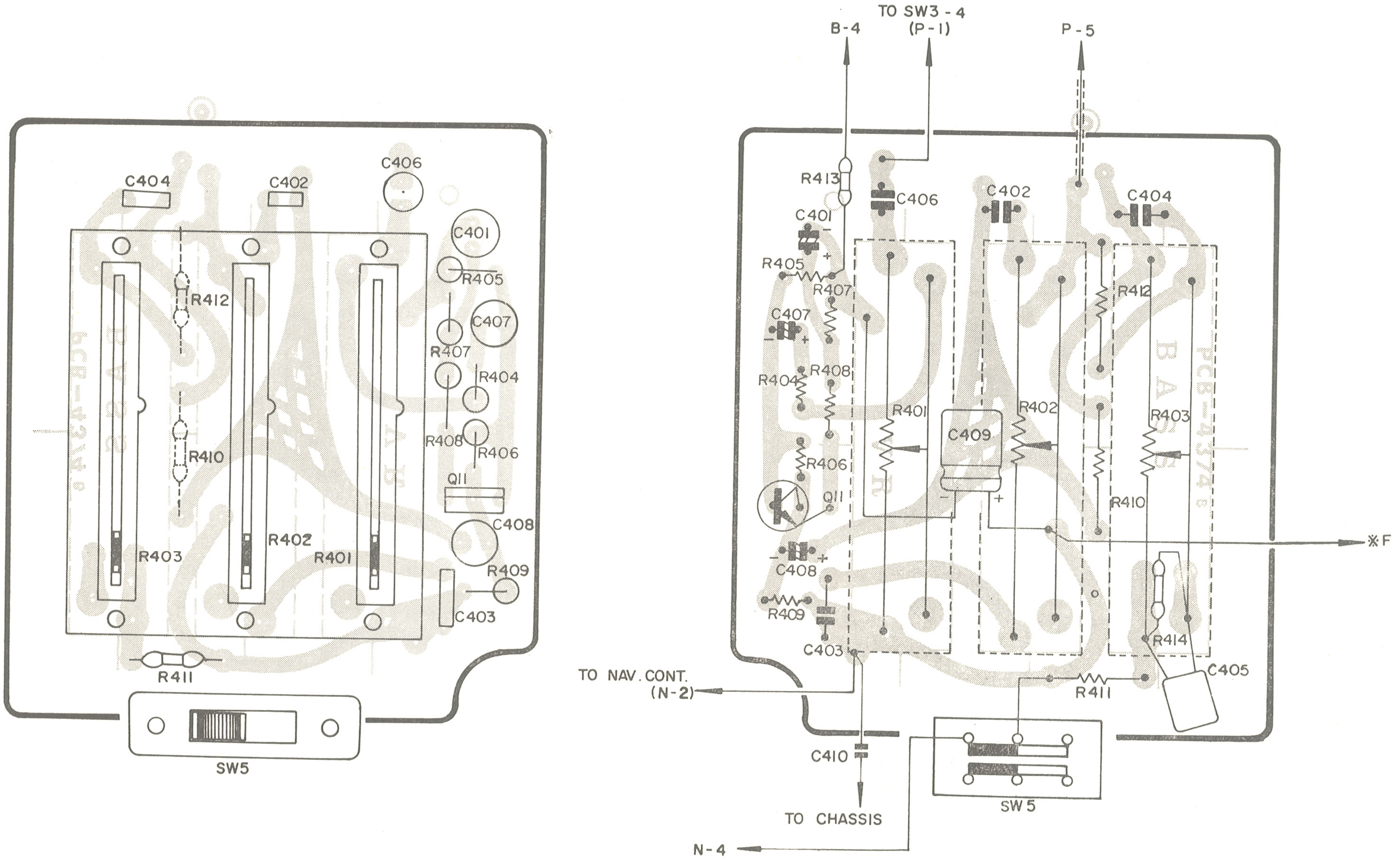
Figure 4 DIAL CORD STRINGING


L202
SW6
C201
C203
C202
C204
C206
L201
TO SWI-5F 2
TO LI C-3
TO SW2 (B-2)
IND.
+
−
TO SWI-4B(B).c
TO SWI-6F(A).2
TO LI (C-1)
TO LI (C-2)
TO SWI-5B.2
TO LI (C-4)
TO SWI-6F(A).1
TO LI (C-6)
TO LI (C-5)
TO SWI-5B.1
TO SWI-5F.1
SW6-5
SW6-3
SW6-1
SW6-2
SW6-6
SW6-4
P
C
TO SW3-2(P-2)
TO SWI-4B(B).c
BATTERY

(A) COMPONENT SIDE

(B) WIRING SIDE

Figure 5 CAR-PORTABLE SELECTOR BOARD

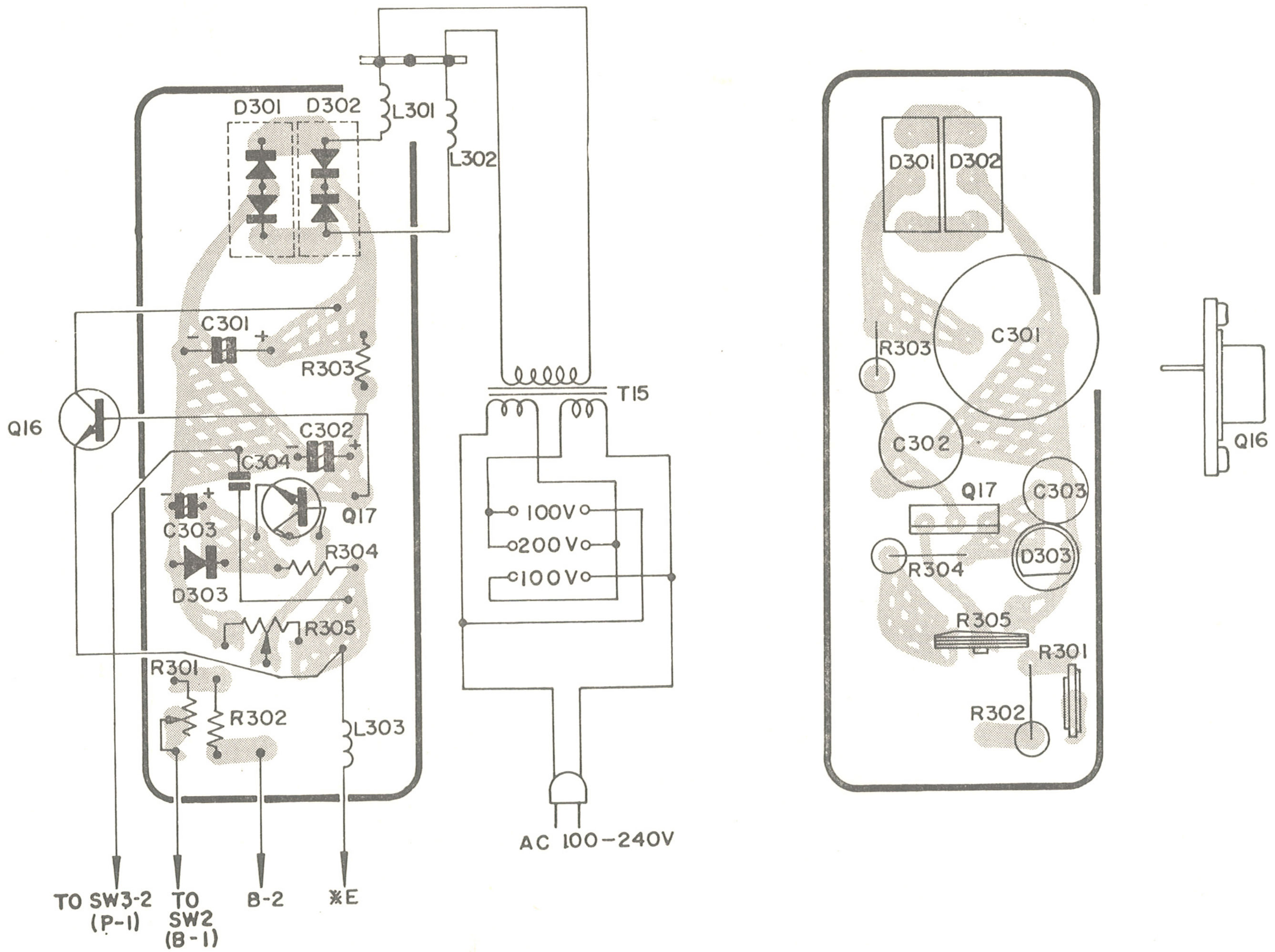


C404
C402
C406
C401
R405
C407
R407
R404
R408
R406
Q11
C408
R409
C403
R412
R410
R403
R402
R401
R411
SW5
TO SW3 - 4
(P - 1)
B - 4
P - 5
R413
C406
C402
C404
C401
R405
R407
R412
C407
R408
R404
R401
C409
R402
R403
PCB-4374 B
BASS
R406
Q11
R410
※F
C408
R409
C403
R414
C405
TO NAV. CONT.
(N - 2)
R411
C410
TO CHASSIS
SW5
N - 4

(A) COMPONENT SIDE

(B) WIRING SIDE

Figure 6 CONTROLS BOARD


D301
D302
L301
L302
C301
R303
Q16
C302
C304
C303
Q17
R304
D303
R305
R301
R302
L303
T15
100V
200V
100V
AC 100-240V
TO SW3-2 (P-1)
TO SW2 (B-1)
B-2
※E
D301
D302
C301
R303
C302
Q17
C303
R304
D303
R305
R301
R302
Q16

(A) COMPONENT SIDE

(B) WIRING SIDE

Figure 7 POWER SUPPLY BOARD

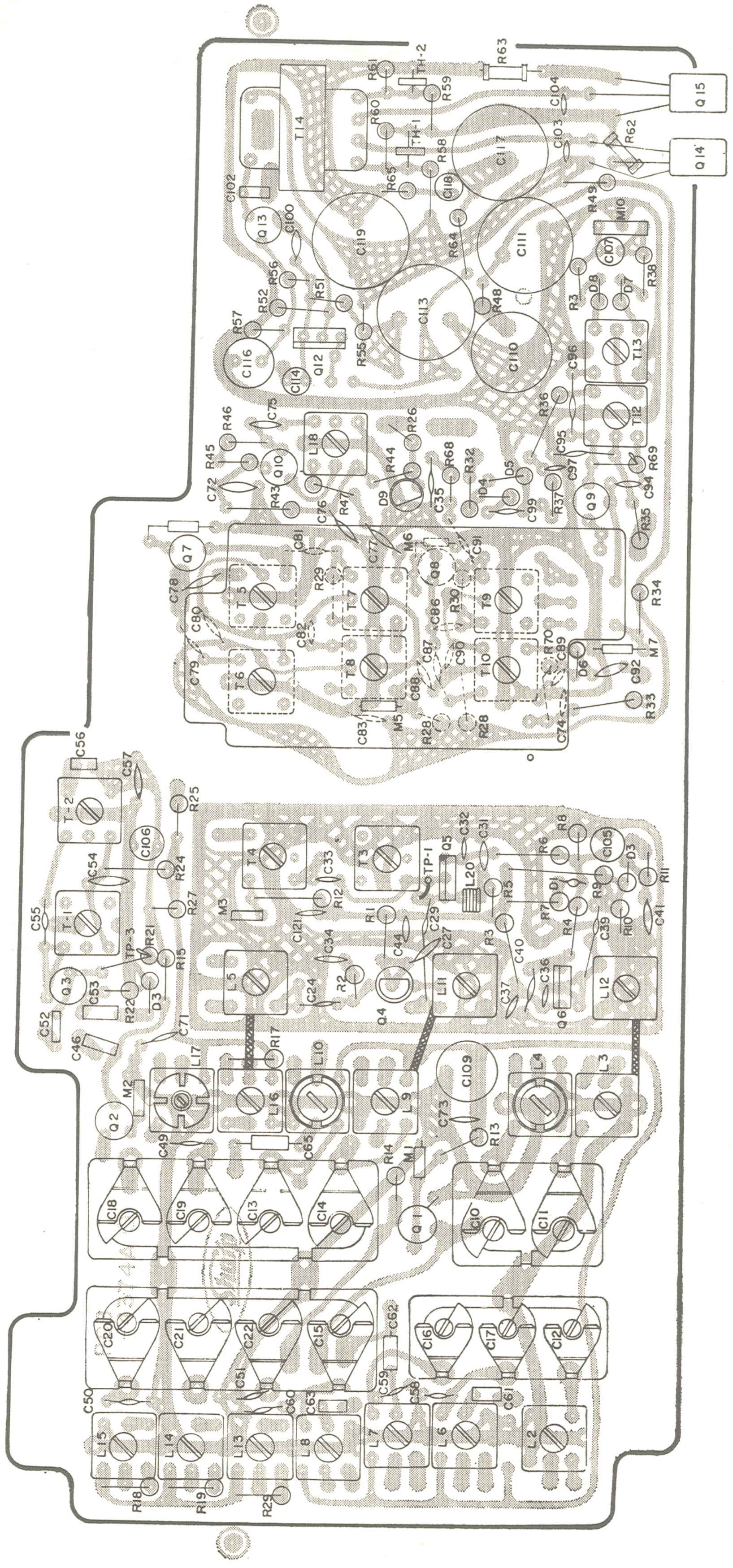


Figure 8 COMPONENT SIDE OF AUDIO BOARD

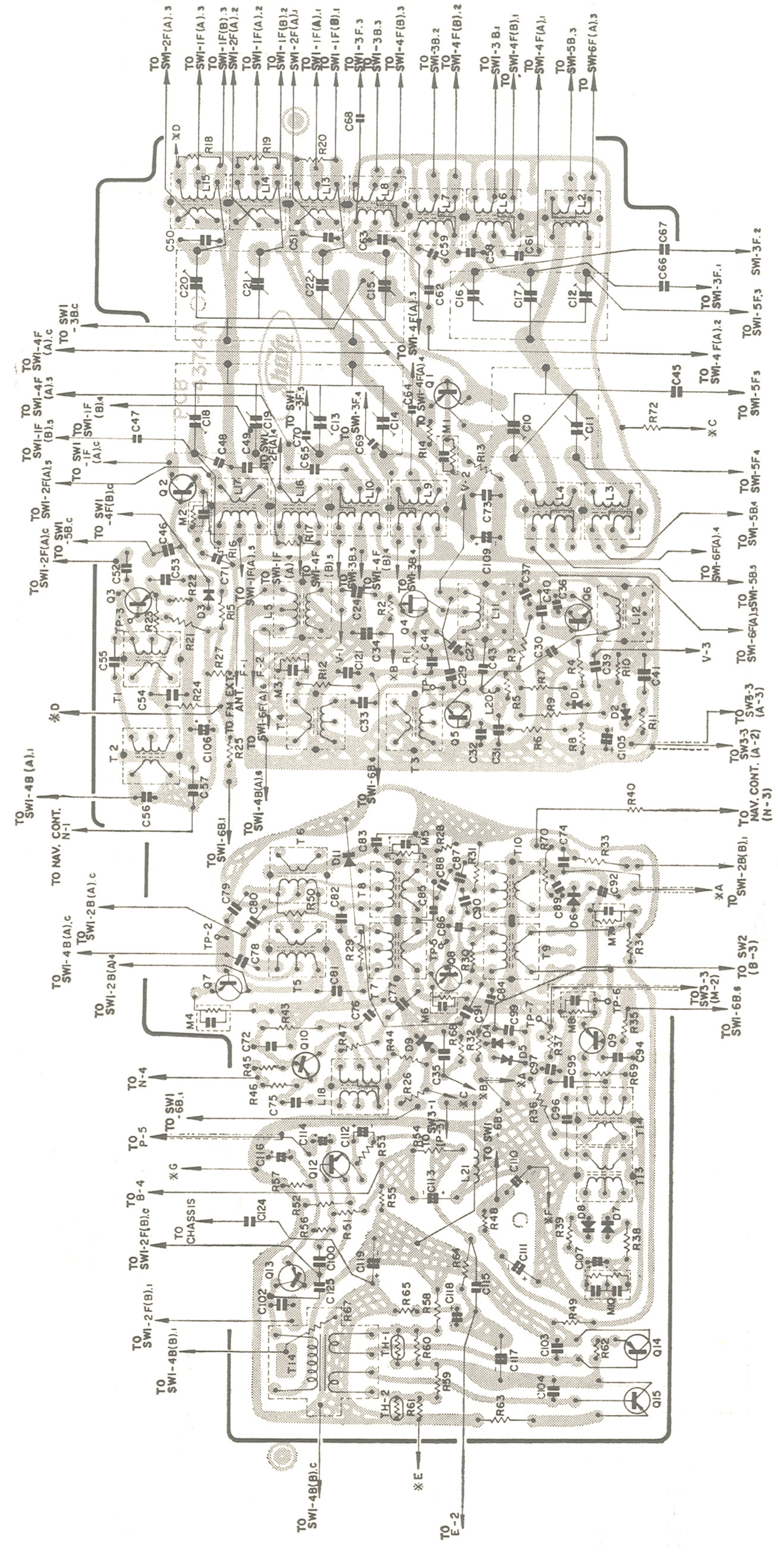


Figure 9 WIRING SIDE OF AUDIO BOARD

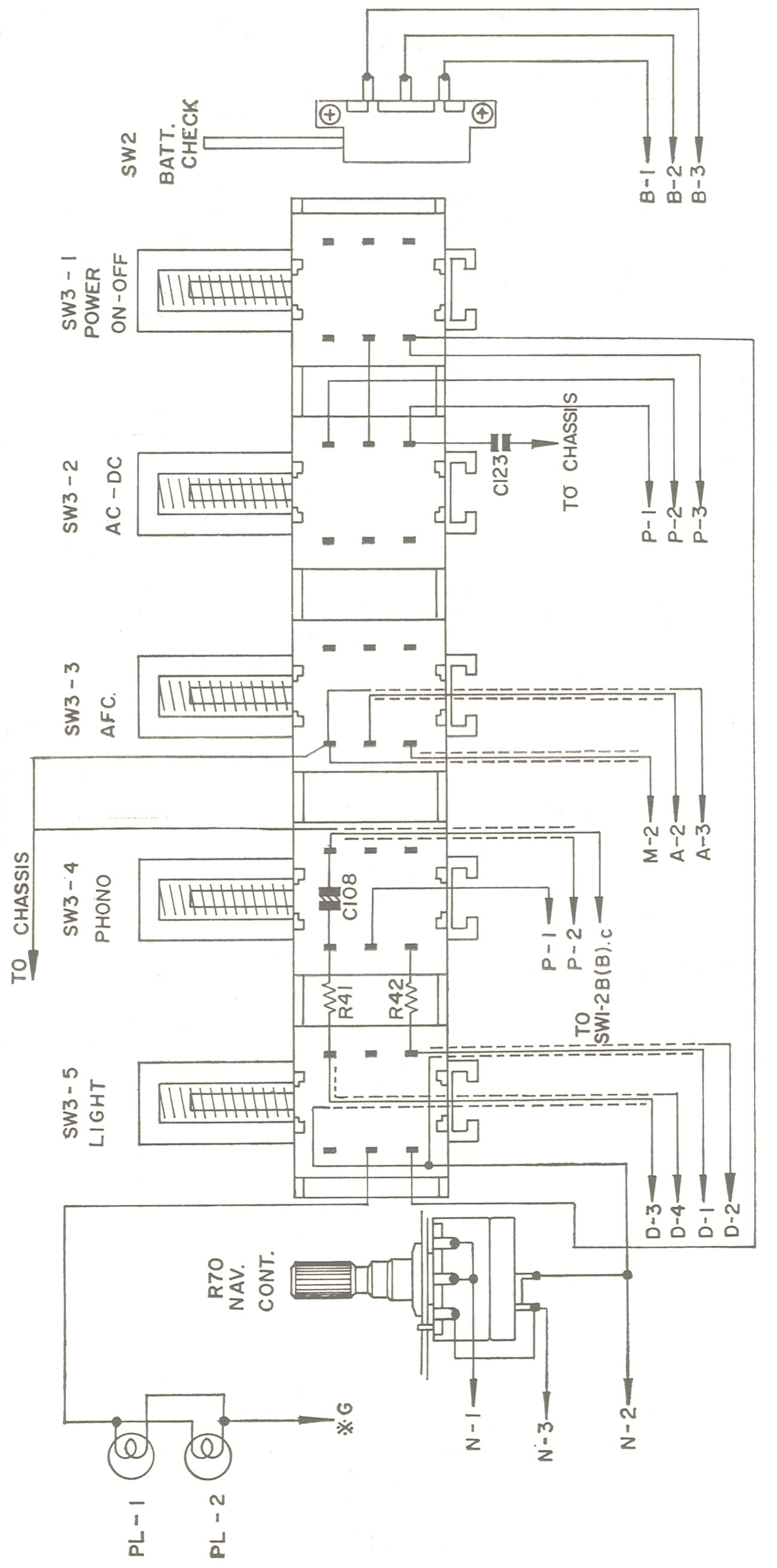

SW2
BATT. CHECK
B-1
B-2
B-3
SW3-1
POWER
ON-OFF
SW3-2
AC-DC
C123
TO CHASSIS
P-1
P-2
P-3
SW3-3
AFC.
M-2
A-2
A-3
TO CHASSIS
SW3-4
PHONO
C108
P-1
P-2
TO SW1-2B(B).c
R41
R42
SW3-5
LIGHT
D-3
D-4
D-1
D-2
R70
NAV.
CONT.
N-1
N-3
N-2
PL-1
PL-2
※G

Figure 10 PUSH-SWITCH

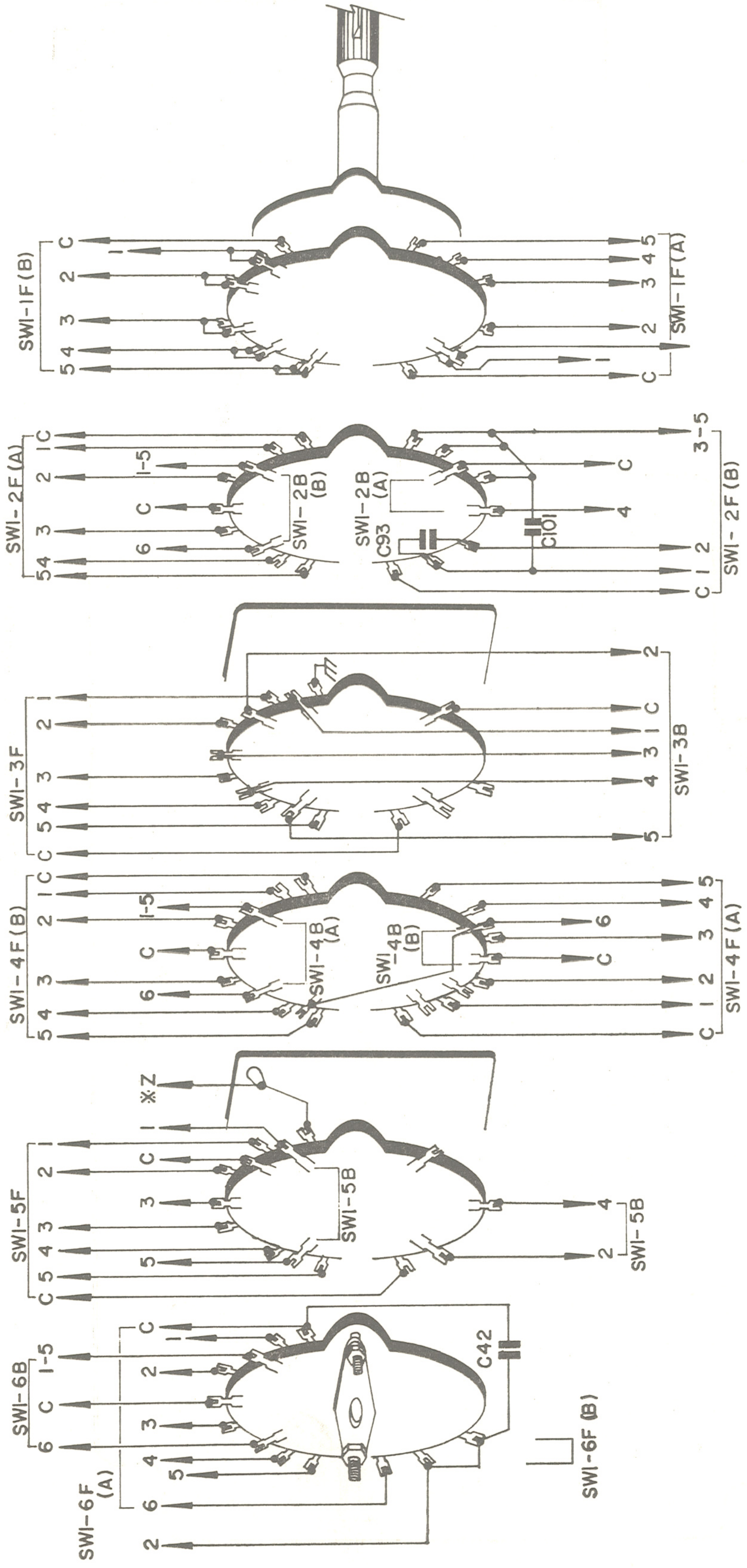
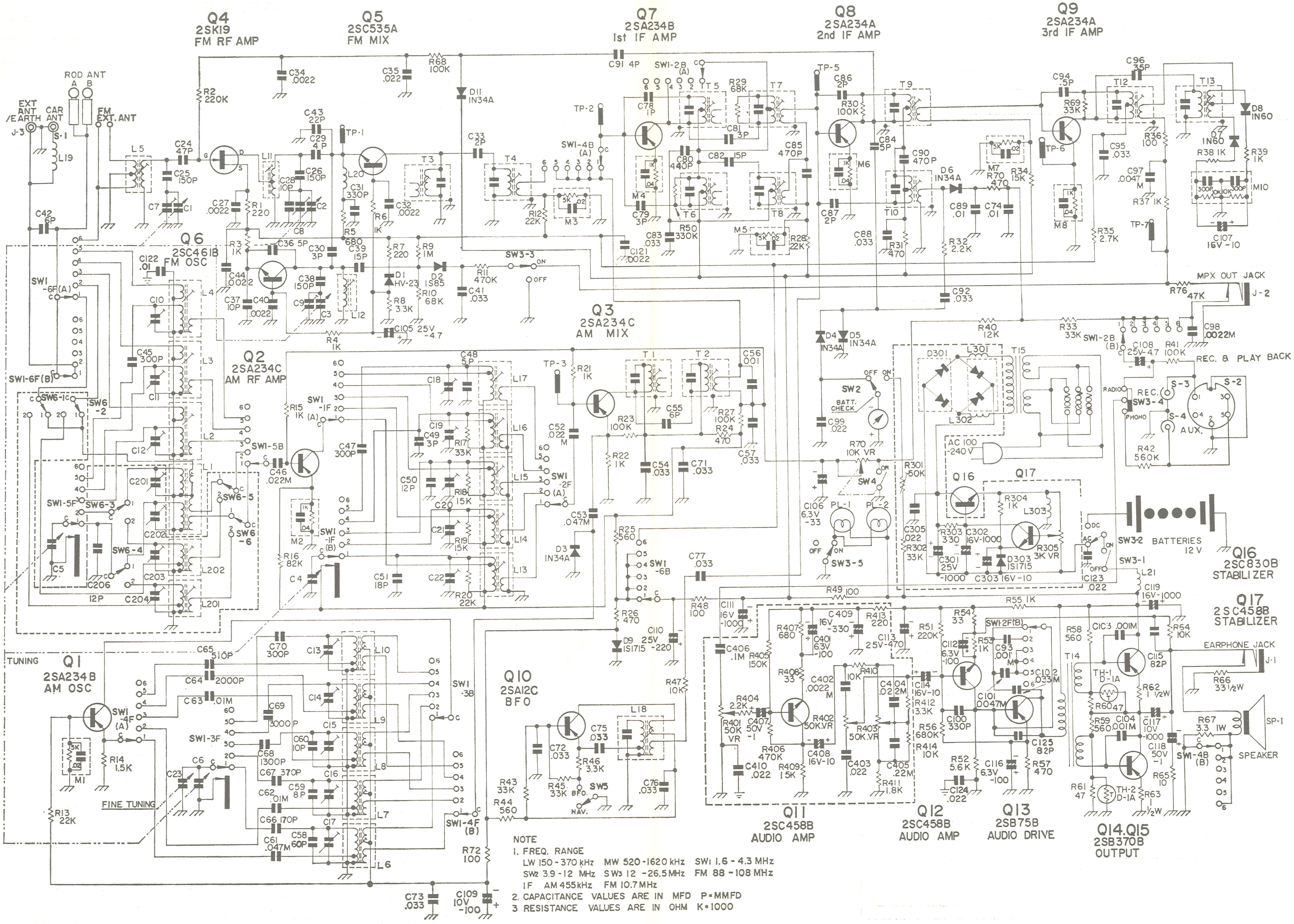

SW1-1F(B)
SW1-1F(A)
SW1-2F(A)
SW1-2B(B)
SW1-2B(A)
C93
C101
SW1-2F(B)
SW1-3F
SW1-3B
SW1-4F(B)
SW1-4B(A)
SW1-4B(B)
SW1-4F(A)
※Z
SW1-5F
SW1-5B
SW1-6B
SW1-6F(A)
C42
SW1-6F(B)

Figure 11 BAND SELECTOR SWITCH


Q4
2SK19
FM RF AMP
Q5
2SC535A
FM MIX
Q7
2SA234B
1st IF AMP
Q8
2SA234A
2nd IF AMP
Q9
2SA234A
3rd IF AMP
ROD ANT
A B
EXT ANT /EARTH
CAR ANT
FM EXT. ANT
J-3
S-1
Q6
2SC461B
FM OSC
Q3
2SA234C
AM MIX
Q2
2SA234C
AM RF AMP
MPX OUT JACK
J-2
REC. & PLAY BACK
RADIO
PHONO
REC.
AUX.
S-2
S-3
S-4
BATT. CHECK
AC 100 -240 V
Q16
Q17
BATTERIES 12 V
Q16
2SC830B
STABILIZER
Q17
2SC458B
STABILIZER
EARPHONE JACK
J-1
SPEAKER
SP-1
TUNING
Q1
2SA234B
AM OSC
FINE TUNING
Q10
2SA12C
BFO
NAV.
Q11
2SC458B
AUDIO AMP
Q12
2SC458B
AUDIO AMP
Q13
2SB75B
AUDIO DRIVE
Q14.Q15
2SB370B
OUTPUT

NOTE
1. FREQ. RANGE
LW 150-370 kHz MW 520-1620 kHz SW1 1.6-4.3 MHz
SW2 3.9-12 MHz SW3 12-26.5 MHz FM 88-108 MHz
IF AM 455kHz FM 10.7MHz
2. CAPACITANCE VALUES ARE IN MFD P=MMFD
3 RESISTANCE VALUES ARE IN OHM K=1000

Figure 12 SCHEMATIC DIAGRAM

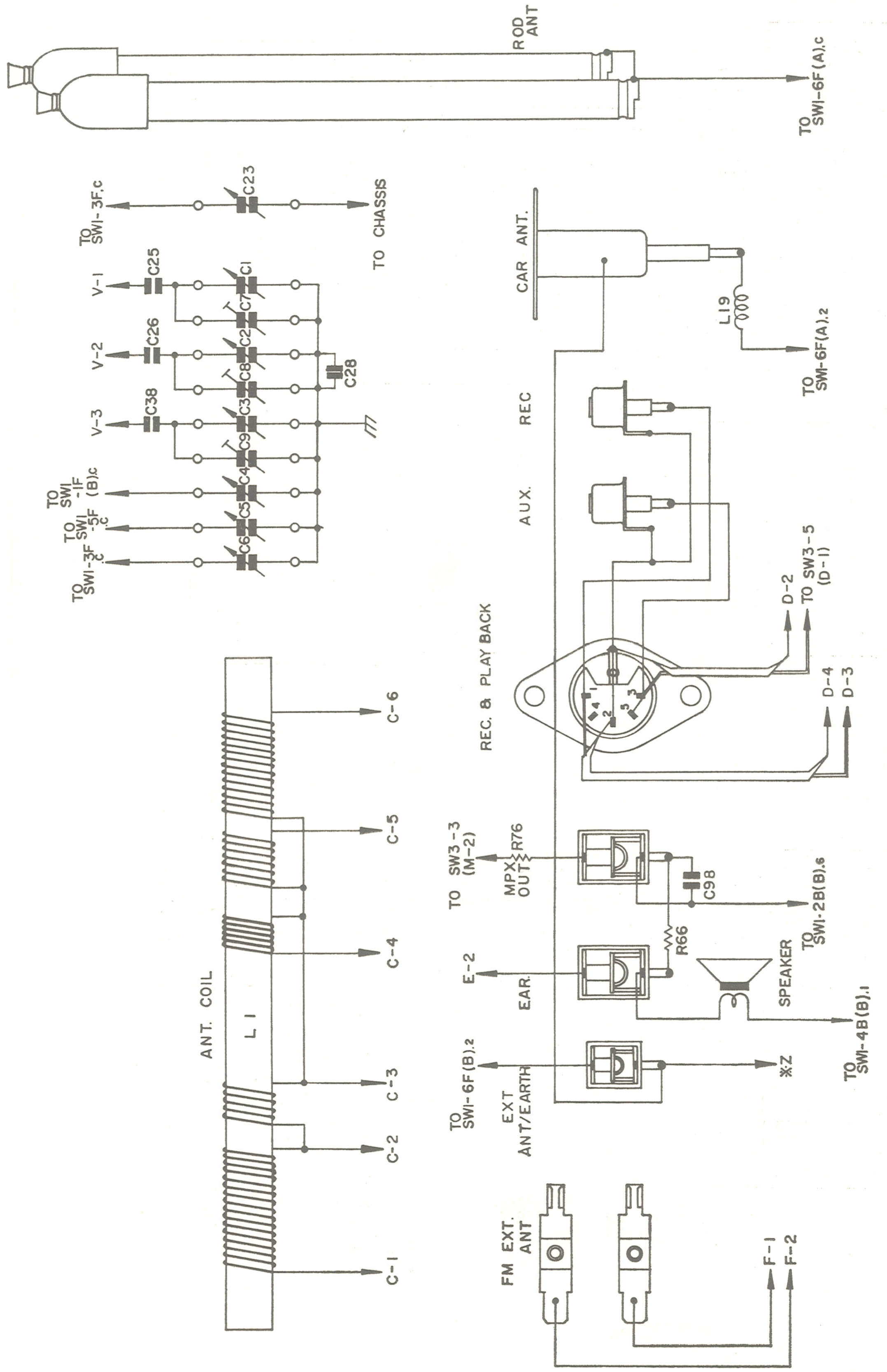


Figure 13 CONNECTING DIAGRAMS

PARTS LIST

RESISTORS

(Unless otherwise specified resistors are 1/4W, 10% carbon type)

REF. NO.	PART NO.	DESCRIPTION
R1, R7	1545222121	220 ohm (1/4SU-220K)
R2, R51	1545222421	220K ohm (1/4SU220KK)
R3, R4, R6, R15, R22, R37, R38, R39, R55, R304	1545210221	1K ohm (1/4SU-1KK)
R5, R407	1545268121	680 ohm (1/4SU-680K)
R8, R46	1545233221	3.3K ohm (1/4SU3.3KK)
R9	1545210521	1Meg ohm (1/4SU-1MK)
R10, R29	1545268321	68K ohm (1/4SU-68KK)
R11, R406	1545247421	470K ohm (1/4SU470KK)
R12, R13, R20, R28	1545222321	22K ohm (1/4SU-22KK)
R14	1545215221	1.5K ohm (1/4SU1.5KK)
R16	1544282321	82K ohm (1/4SA-82KK)
R17, R43, R45, R302	1545233321	33K ohm (1/4SU-33KK)
R18, R19, R34, R409	1545215321	15K ohm (1/4SU-15KK)
R21, R53	1544210221	1K ohm (1/4SA-1KK)
R23, R41	1544210421	100K ohm (1/4SA100KK)
R24, R26, R31, R57, R70	1545247121	470 ohm (1/4SU-470K)
R25, R44, R58, R59	1545256121	560 ohm (1/4SU-560K)
R27, R30, R68	1545210421	100K ohm (1/4SU100KK)
R32, R404	1545222221	2.2K ohm (1/4SU2.2KK)
R33, R69	1544233321	33K ohm (1/4SA-33KK)
R35	1545227221	2.7K ohm (1/4SU2.7KK)
R36, R48, R49	1545210121	100 ohm (1/4SU-100K)
R40	1545212321	12K ohm (1/4SU-12KK)
R42	1544256421	560K ohm (1/4SA560KK)
R47, R64	1545210321	10K ohm (1/4SU-10KK)
R50	1544233421	330K ohm (1/4SA330KK)
R52	1545256221	5.6K ohm (1/4SU5.6KK)
R54	1545233021	33 ohm (1/4SU-33K)
R56	1545268421	680K ohm (1/4SU680KK)
R60, R61	1545247021	47 ohm (1/4SU-47K)
R62, R63	1641310822	1 ohm, 1/2W, 10%, Resin (1/2LL-1K)
R65	1545210021	10 ohm (1/4SU-10K)
R66	1641333322	33 ohm, 1/2W, 10%, Resin (1/2LL-33K)
R67	1641333824	3.3 ohm, 1W, 10%, Resin (1LL-3.3K)
R72	1544210121	100 ohm (1/4SA-100K)
R76	1544247321	47K ohm (1/4SA-47KK)
R303	1545233121	330 ohm (1/4SU-330K)
R405	1545215421	150K ohm (1/4SU150KK)
R408	1545233021	33 ohm (1/4SU-33K)
R410, R414	1544210321	10K ohm (1/4SA-10KK)
R411	1544218221	1.8K ohm (1/4SA1.8KK)
R412	1544233221	3.3K ohm (1/4SA3.3KK)
R413	1544222121	220 ohm (1/4SA-220K)

CAPACITORS

REF. NO.	PART NO.	DESCRIPTION
C1, C2, C3, C4, C5, C6, C7, C8	1560220700	Variable Tuning Gang with Trimmer (XVC-207)
C9	1560270200	Trimmer (TO-702)
C10, C11	1560283300	Trimmer (TO-833)
C12, C16, C17	1560283200	Trimmer (TO-832)
C13, C14, C15, C18, C19, C20, C21, C22, C201, C202, C203, C204	1560283400	Trimmer (TO-834)
C23	1560200200	Fine Tuning (VC-2)
C24	1552347817	47PF, 50V, 5%, Discap (DS-5-478J)
C25, C26, C38	1552315717	150PF, 50V, 5%, Discap (DS-5-157J)
C27, C32, C34, C40, C44, C121	1552613300	.0022MFD, 50V, Discap (D-5-226Z)
C28, C37, C60	1552210827	10PF, 50V, .5PF, Discap (D-5-108D)
C29, C91	1552240917	4PF, 50V, .25PF, Discap (D-5-409C)
C30, C49, C79, C81	1552230917	3PF, 50V, .25PF, Discap (D-5-309C)
C31, C100	1552333717	330PF, 50V, 5%, Discap (DS-5-337J)
C33, C86, C87	1552220927	2PF, 50V, .5PF, Discap (D-5-209D)
C35, C99, C123, C124, C305, C410	1552614700	.022MFD, 50V, Discap (D-5-225Z)
C36, C48, C84	1552250917	5PF, 50V, .25PF, Discap (D-5-509C)
C39, C82	1552215817	15PF, 50V, 5%, Discap (D-5-158J)
C41, C54, C57, C71, C72, C73, C75, C76, C77, C83, C88, C92, C95	1552618300	.033MFD, 50V, Discap (D-5-335P)
C42, C55	1552260917	6PF, 50V, .25PF, Discap (D-5-609C)
C43	1552222817	22PF, 50V, 5%, Discap (D-5-228J)
C45, C47, C70	1558230717	300PF, 50V, 5%, Styrol (S-5-307J)
C46, C52, C403, C404	1556222537	.022MFD, 50V, 20%, Mylar (ML-5-225M)
C50, C206	1552212817	12PF, 50V, 5%, Discap (D-5-128J)
C51	1552218817	18PF, 50V, 5%, Discap (D-5-188J)
C53, C61	1556247537	.047MFD, 50V, 20%, Mylar (ML-5-475M)
C56	1552210637	.001MFD, 50V, 20%, Discap (D-5-106M)
C58	1552360817	60PF, 50V, 5%, Discap (D-5-608J)
C59	1552280817	8PF, 50V, .5PF, Discap (D-5-809D)
C62, C63	1556210537	.01MFD, 50V, 20%, Mylar (ML-5-105M)
C64	1558220617	.002MFD, 50V, 5%, Styrol (S-5-206J)
C65	1558251717	510PF, 50V, 5%, Styrol (S-5-517J)
C66	1552317717	170PF, 50V, 5%, Discap (DS-5-177J)
C67	1558237727	370PF, 50V, 10%, Styrol (S-5-377K)

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
C 68	1558213617	.0013MFD, 50V, 5%, Styrol (S-5-136J)
C 69	1558230617	.003MFD, 50V, 5%, Styrol (S-5-306J)
C 74, C 89	1552210537	.01MFD, 50V, 20%, Discap (D-5-105M)
C 78	1552210917	1PF, 50V, .25PF, Discap (D-5-109C)
C 80	1552344717	440PF, 50V, 5%, Discap (DS-5-447J)
C 85, C 90	1552347717	470PF, 50V, 5%, Discap (DS-5-477J)
C 93, C 103, C 104	1556210637	.001MFD, 50V, 20%, Mylar (ML-5-106M)
C 94	1552205917	.5PF, 50V, Discap (D-5-059C)
C 96	1552235917	3.5PF, 50V, .25PF, Discap (D-5-359C)
C 97, C 101	1556247637	.0047MFD, 50V, 20%, Mylar (ML-5-476M)
C 98	1552222637	.0022MFD, 50V, 20%, Discap (D-5-226M)
C 102	1556233537	.033MFD, 50V, 20%, Mylar (ML-5-335M)
C 105, C 108	1661247325	4.7MFD, 25V, Electrolytic (CU2.5-473R)
C 106	1661233211	33MFD, 6.3V, Electrolytic (CU-06-332Q)
C 107, C 114	1661210213	10MFD, 16V, Electrolytic (CU1.6-102Q)
C 109	1661210112	100MFD, 10V, Electrolytic (CU-1-101Q)
C 110	1661222115	220MFD, 25V, Electrolytic (CU2.5-221Q)
C 111, C 117	1661210012	1000MFD, 10V, Electrolytic (CU-1-100Q)
C 112, C 116, C 401	1661210111	100MFD, 6.3V, Electrolytic (CU-06-101Q)
C 113	1661247115	470MFD, 25V, Electrolytic (CU2.5-471Q)
C 115, C 125	1552382817	82PF, 50V, 5%, Discap (DS-5-828J)
C 118, C 407	1661210327	1MFD, 50V, Electrolytic (CU-5-103R)
C 119, C 302	1661210013	1000MFD, 16V, Electrolytic (CU1.6-100Q)
C 122	1552614300	.01MFD, 50V, Discap (D-5-105Z)
C 301	1661210015	1000MFD, 25V, Electrolytic (CU2.5-100Q)
C 303, C 408	1661210213	10MFD, 16V, Electrolytic (CU1.6-102Q)
C 402	1556222637	.0022MFD, 50V, 20%, Mylar (ML-5-226M)
C 405	1556222437	.22MFD, 50V, 20%, Mylar (ML-5-224M)
C 406	1556210437	.1MFD, 50V, 20%, Mylar (ML-5-104M)
C 409	1661233113	330MFD, 16V, Electrolytic (CU1.6-331Q)

PACKAGED CIRCUITS

REF. NO.	PART NO.	DESCRIPTION
M1, M3, M5, M7	1656631500	Capristor, 5K ohm+.02MFD (PRC-315)
M2, M4, M6, M8	1656630600	Capristor, 1K ohm+.04MFD (PRC-306)
M10	1656640300	Capristor, 10Kohm×2+300PF×2 (PRC-403)

CONTROLS

REF. NO.	PART NO.	DESCRIPTION
R70/SW4	1548286900	10K ohm, Pot., NAV. Control, off-on (8V-869)
R301	1548272300	50K ohm, Pot., Battery Indication Control (8V-723)
R305	1548275500	3K ohm, Pot., Voltage Control (8V-755)
R401	1548285000	50K ohm, Pot., Volume Control (8V-850)
R402	1548285000	50K ohm, Pot., Treble Control (8V-850)
R403	1548285000	50K ohm, Pot., Bass Control (8V-850)

SEMICONDUCTORS

REF. NO.	PART NO.	DESCRIPTION
Q1	1522214821	Transistor, AM Oscillator (2SA234Ⓑ)
Q2	1522214831	Transistor, AM RF Amplifier (2SA234Ⓒ)
Q3	1522214831	Transistor, AM Mixer (2SA234Ⓒ)
Q4	1527217305	Transistor, FM RF Amplifier (2SK19)
Q5	1522222710	Transistor, FM Mixer (2SC535Ⓐ)
Q6	1527210721	Transistor, FM Oscillator (2SC461Ⓑ)
Q7	1522214821	Transistor, 1st IF Amplifier (2SA234Ⓑ)
Q8	1522214811	Transistor, 2nd IF Amplifier (2SA234Ⓐ)
Q9	1522214811	Transistor, 3rd IF Amplifier (2SA234Ⓐ)
Q 10	1522210131	Transistor, BFO (2SA12Ⓒ)
Q 11	1522223720	Transistor, Audio Amplifier (2SC458Ⓑ)
Q 12	1522223720	Transistor, Audio Amplifier (2SC458Ⓑ)
Q 13	1522211221	Transistor, Audio Driver (2SB75Ⓑ)
Q 14, Q 15	1522219121	Transistor, Output (Matched Pair) (2SB370Ⓑ)
Q 16	1527217921	Transistor, Stabilizer (2SC830Ⓑ)
Q 17	1522223720	Transistor, Stabilizer (2SC458Ⓑ)
D1	1527270204	Diode, FM Bias Stabilizer (HV-23)
D2	1522275501	Diode, FM AFC (1S85)
D3	1522270101	Diode, AM Oscillator Control (1N34A)
D4	1522270101	Diode, Detector Tuning Eye (1N34A)
D5	1522270101	Diode, Detector Tuning Eye (1N34A)
D6	1522270101	Diode, AM Detector (1N34A)
D7, D8	1522270208	Diode, FM Detector (Matched Pair) (1N60)
D9	1527271301	Diode, Stabilizer (1S1715)
D 11	1522270101	Diode, FM AVC (1N34A)
D303	1527270301	Diode, Stabilizer (1S1715)
S R-1	1522260500	Power Rectifier (SI-RECT-53)
S R-2	1522261300	Power Rectifier (SI-RECT-59)
T H-1	1522280101	Thermistor, AOC (D-1A)
T H-2	1522280101	Thermistor, AOC (D-1A)

COILS AND TRANSFORMERS

REF. NO.	PART NO.	DESCRIPTION
L 1	1508226601	Coil, LW & MW Antenna (8L-266A01)
L 2	1507229600	Coil, SW1 Antenna (7L-296A)
L 3	1508225300	Coil, SW2 Antenna (8L-253A)
L 4	1508225400	Coil, SW3 Antenna (8L-254A)
L 5	1508210200	Coil, FM Antenna (8L-102A)
L 6	1507201400	Coil, LW Oscillator (7L-014B)
L 7	1507201500	Coil, MW Oscillator (7L-015B)

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
L 8	1507201600	Coil, SW1 Oscillator (7L-016B)
L 9	1507201700	Coil, SW2 Oscillator (7L-017B)
L 10	1507201800	Coil, SW3 Oscillator (7L-018B)
L 11	1507264500	Coil, FM RF (7L-645C)
L 12	1507201900	Coil, FM Oscillator (7L-019B)
L 13	1507254900	Coil, LW RF (7L-549C)
L 14	1507255000	Coil, MW RF (7L-550C)
L 15	1507255100	Coil, SW1 RF (7L-551C)
L 16	1507255200	Coil, SW2 RF (7L-552C)
L 17	1507264400	Coil, SW3 RF (7L-644C)
L 18	1507255400	Coil, BFO (7L-554C)
L 19	1507292000	Coil, Car Loading (7L-920)
L 20	1507295400	Coil, Emitter Choke (7L-954)
L 21, L 301, L 302, L 303	1507299500	Coil, Power Choke (7L-995)
L 201	1507254900	Coil, LW Car Antenna (7L-549C)
L 202	1508210900	Coil, MW Car Antenna (8L-109A)
T 1, T 2	1507278800	Transformer, 1st AM IF (7IF-788)
T 3, T 4	1507287400	Transformer, 1st FM IF (7IF-874)
T 5, T 7	1507274500	Transformer, 2nd FM IF (7IF-745)
T 6	1507289800	Transformer, 2nd AM IF (7IF-898)
T 8	1507276500	Transformer, 2nd AM IF (7IF-765)
T 9	1507274500	Transformer, 3rd FM IF (7IF-745)
T 10	1507273400	Transformer, 3rd AM IF (7IF-734)
T 12	1507282900	Transformer, Discriminator (7IF-829)
T 13	1507283000	Transformer, Discriminator (7IF-830)
T 14	1516282900	Transformer, Input (6T-829)
T 15	1515281400	Transformer, Power (5T-814)

MISCELLANEOUS

REF. NO.	PART NO.	DESCRIPTION
	11033034	Cabinet, Front Assembly (3CAB-4374A)
	11122731	Cabinet, Back (U-BUTA4374)
	11092491	Knob, Band Selector (9K-491)
	11092492	Knob, Fine Tuning (9K-492)
	11092493	Knob, Tuning (9K-493)
	11092494	Knob, NAV. Control (9K-494)
	11092495	Knob, Power, AC, AFC, Phono, Light (9K-495)
	11092496	Knob, Battery Check (9K-496)
	11092456	Knob, Bass, Treble, Volume Control (9K-456)
	11202874	Pointer, Dial Frequency (SISIN4374A)
	11202875	Pointer, Dial Band (SISIN4374B)
	11213788	Dial (DIAL-4374)
	11232867	Backplate, Dial (DIAL-P4374)
	11243770	Indication Plate, Map (IND-P4374A)
	1133237058	Decoration Metal, Front (XDECM4374A)
	11332378	Decoration Metal, Top & Under (DEC-M4374C)
	1133237958	Decoration Metal, Center (DEC-M4374D)
	11352729	Emblem, SHARP (DEC-B4374A)
	11352730	Decoration Badge, Multi Band Deluxe (DEC-B4374B)
	11302915	Punching Metal, Speaker (PUNCH4374)
	11362718	Decoration Plate, Cabinet Assembly (DEC-P4374)
	1150240532	Leg (LEG-405)
	11933309	Cover, Battery (B-BUTA4374)
	1193394732	Holder, Socket (SO-HOL4374)
	11933335	Cover, Map (COVER-4374)
	11933336	Case, Map (CASE-4374)
	11933748	Cover, Terminal Compartment (S-BUTA4374)
	1193333900	Holder, Switch (SW-HOL4374)
	1143260153	Angle, Speaker (SP-ANGLE1)
	1322220100	Lug Plate (LG-201)
	1193257358	Spring, Map Case (BANE-4374A)
	1193257451	Spring, Socket Cover (BANE-4374B)
	1193233732	Case, Fuse (FUSE-CASEA)
	1193233832	Cover, Fuse Case (FUSE-CASEB)
	1170277232	Felt (FELT-772)
	11822704	Handle, Assembly (HANDLE4374)
	1193216232	Rubber Cushion, Speaker (GOMU-4374A)
	1193216332	Rubber Cushion, Meter (GOMU-4374B)
	1303238200	Printed Circuit Board, Audio Circuit (PCB-4374A)
	1303238300	Printed Circuit Board, Controls Circuit (PCB-4374B)
	1324210200	Holder, Fuse (110V) (FH-102)
	1324212900	Holder, Fuse (220V) (FH-129)
	1330280851	Radiator (HON-P4137A)
	1333272400	Holder, Antenna Core (CH-724)
	1343212453	Bracket, Varicon Retaining (XVC-A029A)
	1343236053	Bracket, Switch Retaining (XSW-A4374)
	1343204553	Bracket, Slide Volume (VR-A4374)
	1345275853	Bracket, Printed Circuit Board (XPCBA4374A)
	1345275953	Bracket, Printed Circuit Board (XPCBA4374B)
	1353278100	Drum, Double (DP-781)
	1353274500	Drum, Dial Cord Drive (DP-745)
	1385270500	Dial Cord (HARIITO)
	1343205156	Bracket, Pilot Lamp (PL-A4374)
	1385550150	Spring (SPRING)
	1393239700	Pipe, Battery (B-PIPE397)
	1393299656	Terminal Battery (+) (B-TANS1)
	1393252856	Spring, Terminal Battery (−) (SPR-827)
S W1	1531226100	Switch, Band Selector (X2S-61)
S W2	1533262000	Switch, Battery Check (36S-20)
S W3	1533262100	Switch, Power, AC, AFC, Phono, Light Selector (36S-21)

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
SW4/R70	1548286900	10K ohm, Pot., NAV. Control, off-on (8V-869)
SW5	1531242700	Switch, NAV.-BFO Selector (X4S-27)
SW6	1533243000	Switch, Car-Portable Selector (34S-30)
J1, J2	1530213500	Jack, Earnhone, MPXOUT (J-135)
J3	1530213300	Jack, AM Ext. Antenna (J-133)
	1587202600	Wire, Antenna (ANT-WIRE26)
SP1	1570247800	Speaker (1910H-45A)
	1571208700	Telescopic Rod Antenna (XROD-ANT87)
PL1, PL2	1593251400	Pilot Lamp (3PL-514)
S1	1323293000	Socket, Car Ant. (SO-930)
S2	1320297100	Socket, DIN (SO-971)
S3, S4	1320292300	Socket, AUX., REC. (SO-923)
	1593240100	Earphone (3MR-401)
	1323211800	Plug (PG-118)
	1586272590	AC Cord (ACC-725)
	1593230800	Fuse, 110V (3FUSE0.2A)
	1590231700	Fuse, 220V (FUSE0.2A)